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SOUTHERN COMPANY

December 13, 2013

Docket No.: 50-425

NL-13-2523

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555-0001

Vogtle Electric Generating Plant – Unit 2
Licensee Event Report 2013-003-00
Manual Reactor Trip due to Lowering Condenser Vacuum

Ladies and Gentlemen:

In accordance with the requirements of 10 CFR 50.73(a)(2)(iv)(A), Southern Nuclear Operating Company (SNC) is submitting the enclosed Licensee Event Report, 2-2013-003. This letter contains no NRC commitments. If you have any questions, please contact George Gunn at (706) 826-3596.

Respectfully submitted,

T. E. Tynan
Vice President – Vogtle

TET/KDM

Enclosure: Unit 2 Licensee Event Report 2013-003-00

cc: Southern Nuclear Operating Company
Mr. S. E. Kuczynski, Chairman, President & CEO
Mr. D. G. Bost, Executive Vice President & Chief Nuclear Officer
Mr. B. L. Ivey, Vice President – Regulatory Affairs
Mr. D. R. Madison, Vice President – Fleet Operations
Mr. C. R. Pierce, Regulatory Affairs Director
Mr. D. Manigo, Vogtle OE Coordinator
RType: CVC7000

U. S. Nuclear Regulatory Commission
Mr. V. M. McCree, Regional Administrator
Mr. R. E. Martin, NRR Senior Project Manager - Vogtle
Mr. L. M. Cain, Senior Resident Inspector – Vogtle

Vogtle Electric Generating Plant – Unit 2
Licensee Event Report 2-2013-003-00
Manual Reactor Trip due to Lowering Condenser Vacuum

Enclosure

Unit 2 Licensee Event Report 2-2013-003-00

NRC FORM 366 (10-2010) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 10/31/2013

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA/Privacy Section (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects.resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Vogtle Electric Generating Plant -Unit 2	05000 425	1 OF 3

4. TITLE
Manual Reactor Trip Due to Lowering Condenser Vacuum

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
10	22	13	2013	- 003 -	00				FACILITY NAME	DOCKET NUMBER

9. OPERATING MODE
1

10. POWER LEVEL
25

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§: *(Check all that apply)*

☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☒ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ OTHER
☐ 20.2203(a)(2)(vi)	☐ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER (Include Area Code)
Vogtle Electric Generating Plant / Karen Morrow, Licensing Engineer	706-826-3365

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
B	SH	ISV	M449						

14. SUPPLEMENTAL REPORT EXPECTED

☐ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☒ NO

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR

ABSTRACT *(Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)*

Unit 2 Reactor was manually tripped at 11:44 on 10-22-13 due to lowering condenser vacuum. The Unit was undergoing power ascension in Mode 1 at 25 percent power. At the time of the reactor trip, maintenance was in progress on Main Feedwater Pump (MFP) B. Prior to work commencing the possibility of impacting condenser vacuum due to maintenance activities was discussed and operational limits were established. After the MFP B pump steam chest lift was initiated, condenser vacuum began lowering and maintenance was directed to lower the MFP B steam chest. Condenser vacuum approached the pre-determined operational limit of 23 inches of mercury vacuum and the Shift Supervisor directed a manual reactor trip of the Unit 2 reactor. Unit 2 was stabilized in Mode 3 on Auxiliary Feedwater with the Main Condenser available for decay heat removal. All systems responded as expected. The primary cause of the event was air in leakage past the MFP B turbine exhaust valve to the Main Condenser.

The safety significance of this incident is very low and there were no adverse effects on the health and safety of the public.

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Vogtle Electric Generating Plant -Unit 2	05000425	2013	- 003	- 00	2 OF 3

NARRATIVE

A. REQUIREMENT FOR REPORT

This report is required per 10CFR 50.73(a)(2)(iv)(A) due to an unplanned manual actuation of the Reactor Protection System (RPS).

B. UNIT STATUS AT TIME OF EVENT

At the time of the event, Unit 2 was in Mode 1 at 25 percent rated thermal power.

C. DESCRIPTION OF EVENT

A manual Unit 2 reactor trip occurred at approximately 25 percent reactor power on October 22, 2013 at 11:44 due to lowering of condenser vacuum. Maintenance had lifted the Unit 2 main feed pump (MFP) B steam chest one inch in preparation for work to repair a galled valve stem on one of the control valves. During this evolution, the MFP B steam exhaust isolation valve to condenser, allowed enough system in-leakage to overwhelm the in-service Steam Jet Air Ejector (SJAE) and the two mechanical vacuum pumps that were running to maintain condenser vacuum. Prior to work commencing the possibility of impacting condenser vacuum due to maintenance activities was discussed and operational limits were established. As condenser vacuum approached the pre-determined operational limit of 23 inches of mercury vacuum, the Shift Supervisor directed a manual reactor trip of the Unit 2 reactor. Unit 2 was stabilized in Mode 3 on Auxiliary Feedwater with the Main Condenser available for decay heat removal. All systems responded as expected.

D. CAUSE OF EVENT

The cause of the event was valve leak-by from the MFP turbine exhaust valve causing an inadequate isolation boundary for the steam and vacuum environment.

E. SAFETY ASSESSMENT

When the reactor tripped, all rods fully inserted. As a result of the reactor trip, the Feedwater System isolated and the Auxiliary Feedwater System was placed in service. The unit was stabilized in Mode 3 at nominal operating temperature and pressure. The plant responded as designed and there were no complications with the plant shutdown, there was no adverse effect on plant safety or the safety and health of the public.

F. CORRECTIVE ACTION

Revise operating procedures to specify that MFP maintenance activities with the potential to impact condenser vacuum must be completed prior to entering Mode 1. In addition, procedures will require a condenser in-leakage calculation, an evaluation of system dynamics to ensure vacuum margin, and existence of adequate margin to account for potential new in-leakage from the work activity.

G. ADDITIONAL INFORMATION

1) Failed Components:

Component: ISV-Isolation Valve
Manufacturer: M449-Mosser Industries Inc.

2) Previous Similar Events:

A review of Licensee Event Reports did not reveal another instance whereby a manual reactor trip occurred following the lowering of condenser vacuum due to in-leakage from use of unsuitable valve seat material.

3) Energy Industry Identification System Code:

Condenser Vacuum System - SH